

REMARKS

The prior art reference *Adams* discloses an ergonomic input device that, by intentional design, does not have any finger buttons on its top surface. Instead, thumb buttons 28, 30 are provided for those functions, and the fingers are only required to *slide* or roll a ball and wheel instead of depressing buttons. Column 7, lines 55-57. *Adams* is replete with language that emphasizes the importance of this design feature, such as, "[the] fingers are oriented in neutral postures for operation of the actuators." Column 1, lines 61-62; column 4, lines 26-29. The overall configuration of the mouse and the arrangement of the actuators permits the user to carry out *all* of the functions provided by the actuators while the forearm is in a neutral position zone. Column 1, lines 64-66. The actuators and shape of the device also minimizes extension of the fingers and, in particular, minimizes abduction and adduction of the fingers. Column 2, lines 16-18; column 6, lines 47-48.

The avoidance of finger buttons on top of *Adams'* mouse is a critical distinction because it prevents *Adams* from being combined with the other cited reference, *Gillick*. *Gillick* discloses a more conventional mouse having two top surface finger buttons 18, 22 that must be depressed by the fingers of the user. *Adams* teaches one skilled in the art to avoid top surface finger buttons, like those of *Gillick*, to maintain the fingers in a neutral position such that they are only used for sliding the trackball or wheel rather than depressing buttons. It would not be obvious for one skilled in the art to combine these references since *Adams* is opposed to the teachings of *Gillick*. Moreover, there is certainly no suggestion and there is arguably even a "teaching away" from joining these references. Thus, *Gillick* is effectively disqualified from being used with *Adams* and the claims cannot be rejected under § 103 with this combination of references.

Claim 1 has several of these features that are distinguishable over the cited references. Claim 1 requires "a plurality of finger buttons on the top surface of the body adjacent to the front end." Since *Adams* teaches away from the use of one's fingers to actuate buttons on the top surface of the mouse, one skilled in the art would not be inclined to combine *Adams* with *Gillick*,

which teaches the common practice of using finger buttons on the top surface of the mouse. Claim 1 also requires "a thumb button *extending* from the thumb sidewall and located *above* the thumb channel so that the thumb of the user will be *free of contact* with the thumb button when the thumb of the user is in the thumb channel" (emphasis added). *Adams* specifically shows and describes a flush-mounted thumb button that is in continuous contact with the user's thumb. *Adam's* thumb button is not located above the user's thumb. Consequently, one skilled in the art would not combine a reference (*Gillick*) that teaches a conventional thumb button and thumb button configuration, with another reference (*Adams*) that teaches to the contrary. For these reasons, claim 1 is not obvious in light of the cited references and is in condition for allowance.

Claims 2-16 ultimately depend from claim 1 and are allowable for the same reasons as claim 1. In addition, these claims contain language that is readily distinguishable over the cited combination of references. For example, claim 2 states that "the top surface of the body has an arcuate side view profile that is substantially defined by a single radius, and wherein the profile extends from the front end to the rear end." This claim is illustrated in Applicant's Figure 4, wherein the single radius 55 defines the curvature of the top surface, all the way from front end 47 to rear end 49. In contrast, *Adams'* Figure 5 shows a top surface that is only arcuate at element 88, but not to the left or right (element 86). *Adams'* top surface is certainly not arcuate at front end 38 or rear end 82, or defined by a single radius. Thus, all the elements of claim 2 are not found in the either reference or their combination. Claim 2 is in condition for allowance.

Claim 3 is allowable for the same reasons as claim 2. Claim 3 states that "the rear end of the body is substantially contiguous in shape with the profile of the top surface." This is only possible if the rear end is circumscribed along the same radius as the top surface adjacent to it. Since *Adams'* top surface 86 (Figure 5) is flat prior to interconnecting with rear end 82, it cannot be contiguous in shape with it. Similarly, claim 4 requires the finger buttons to be contiguous in shape with the profile of the top surface. First, *Adams* has no finger buttons and actually avoids them on the top surface. Second, the top surface is flat as it intersects front end 38. Claim 5 continues this theme by requiring the top surface to span an arcuate segment of approximately

110 degrees (see Applicant's Figure 4). This is in direct contrast to *Adams'* Figure 5, which is only arcuate for approximately 40 degrees (20 degrees to the left and to the right of element 88). The rest of the top surface of *Adams* is flat and has fixed slopes. Thus, claims 3-5 are in condition for allowance.

Claim 6 requires the front edge of the top surface of the body to be forward of the front edge of the bottom surface. In other words, the front end of Applicant's mouse leans forward (again see Figure 4). This requirement is not found in the cited references which disclose identical front ends having vertically upright front ends that are perpendicular to their respective bottom surfaces. See Figure 5 of *Adams* and Figure 1 of *Gillick*.

Claim 7 states that "the thumb sidewall is inclined outward at the front end of the body, and the thumb sidewall is inclined inward at the rear end of the body." This element is best illustrated in Applicant's Figures 8 and 9. In Figure 8, thumb sidewall 51 inclines away (angle 61) from the mouse, and, in Figure 9, thumb sidewall 51 inclines toward (angle 78) the mouse. In contrast, Figures 9 and 10 of *Adams* clearly show vertical thumb sidewalls 84 that are almost perpendicular to the support surface.

Claim 8 is directed to Applicant's Figure 6 wherein the thumb ball support 71 "has an arcuate top view profile that is substantially defined by a single radius." Clearly, a circle is circumscribed by radius 80 about center point 75 to define the thumb ball support. In contrast, *Adams'* Figure 4 shows a relatively flat thumb ball support 84 that engages a separate rounded rear end 82. Similarly, claim 9 (which depends from claim 8) states that "the rear end of the body has an arcuate top view profile that is contiguous with the top view profile of the thumb ball support." Figure 4 of *Adams* clearly demonstrates that its support 84 and rear end 82 are not defined by a single radius. Claim 10 takes this distinguishing element a step further by specifically requiring the thumb ball support and the rear end to form "an arcuate segment of approximately 225 degrees." Since the side and rear ends of *Adams* are not a contiguous, single-

radius segment, they cannot satisfy this requirement of claim 10. Thus, claims 8-10 are allowable.

Claim 11 is allowable for the same reasons as claim 7 and more so. *Adams'* Figure 9 shows a near vertical or perpendicular thumb wall, while claim 11 requires the thumb ball support to taper "into the thumb sidewall at angle of approximately 45 degrees." Claim 12 requires the thumb ball support to extend from a lower portion of the thumb sidewall. These claims are likewise allowable.

The elements of claim 13 are best illustrated in Figure 6, wherein "the body has a width [element 80 plus element 73] measured from the opposite sidewall to an edge of the thumb ball support, and the thumb ball support [element 80] comprises about 25 to 35% of the width of the body beyond the thumb sidewall." Figure 4 of *Adams* shows a thumb ball support comprising, at best 5% of the total width of the mouse. Claim 14 defines the thumb button as "arcuate in shape and about 1.5 inches long." Claim 15 adds an unique "concave detent [95] located between the finger buttons [91, 93]." *Adams* has no finger buttons, and *Gillick* shows convex and flat surfaces. Finally, claim 16 adds "a scroll tab extending from the detent, and wherein the finger buttons have inner lateral side edges that abut each other rearward of the detent." Again, *Adams* has no finger buttons, and *Gillick's* finger buttons are completely spaced apart. Each of these claims is allowable for the same reasons as claim 1 and for their own further distinguishing characteristics, which are not found in any reference, or in any combination of references.

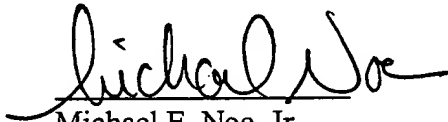
Independent claim 17 has all the elements of claim 1 and also incorporates most of the language of claims 2 and 8. Claim 17 is allowable for the reasons previously given for each of those claims. Claim 17 requires finger buttons on top of the mouse, and a thumb button extending from and located above the thumb channel free of contact with the user's thumb. Each of these elements contradict the objectives of *Adams*. Claim 1 also requires the top surface to be defined by a single radius from the front end to the rear end, and for the thumb ball support to have an arcuate top view profile that is defined by a single radius. Each of these elements is

distinguishable over the cited references or any other combination of references. Thus, claim 17 is allowable.

The remaining claims 18-51 essentially track the language of the previous claims by claiming various combinations of the unique elements previously named and distinguished over the prior art. Each of these claims is likewise in condition for allowance for the same reasons given above.

It is respectfully submitted that the claims are in condition for allowance and favorable action is requested. No extension of time is believed to be required. However, in the event that an extension of time is required, please charge that extension fee and any other required fees to **IBM Corporation Deposit Account Number 50-0563.**

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Michael Noe", written over a horizontal line.

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Received in the U.S.P.T.O.

In re Application of:

RAVI S. ADAPATHYA, ET AL.

Asymmetrical Computer Mouse Design

With Extended Thumb Button

09/404,182

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